Var. CONFERTUM, Lindbg., near Newfield, Gloucester Co.;
Sphagnum cymbifolium, Ehrh., var. *squarrosulum* (Nees.) in bogs, Atsion, Burlington Co.

Var. CONGESTUM, Schimp. (var. *purpurascens*, Russow.,) occurs near Newfield, Gloucester Co.

Sphagnum acutifolium, Ehrh., var. DEFLEXUM, Schimp., margins of bogs, Newfield, Gloucester Co.

Var. ELEGANS, Braithw., open bogs, Atsion, Burlington Co.

Sphagnum subsecundum, Nees., var. AURICULATUM, (Schimp.) Lindbg., swamps near Newfield, Gloucester Co.

Var. OBESUM, Wils., swamps near Atsion, Burlington Co.

Sphagnum neglectum, Angstr. var., swamps near Newfield, Gloucester Co.

Sphagnum macrophyllum, Bernh., in ponds at Willow Grove, Cumberland Co., and Malaga, Gloucester Co.

EUGENE A. RAU, *Bethlehem, Pa.*

GENERAL NOTES.

Vitis riparia.—As represented in this locality this is a strong, vigorous climber, growing in bottoms and low grounds along streams; the flowers appear from one to two weeks later than any other species of *Vitis* here, but the fruit is ripened remarkably soon.

Usually we have ripe grapes the first week in July, but this season was very backward with late frosts, and I saw no ripe fruit until the 12th of July, while the so-called Summer grape (*V. æstivalis*) ripens its fruit about the middle of September. Now, as our manuals call this a Winter or Frost Grape, and it is so stated in the Floras of Iowa and Michigan, I would inquire if this is the usual habit of the plant in other localities?

The panicles are shorter and closer, with smaller and sweeter berries than those of *V. cordifolia*.

Here it is called Fox, Slue, or Sioux Grape.—FRANK BUSH, *Independence, Missouri.*

Graphephorum festucaceum, Gray.—Last July, while collecting *Scirpus fluviatilis*, Gray, in a small slough about a quarter of a mile west of my house, I found a grass which proves to be an interesting discovery. Judging it to be a *Graphephorum*, though differing from the description of the single species and its variety *major* in the Manual, I sent it to Dr. Gray for determination, who promptly reported it to be *Graphephorum festucaceum*, Gray, (*Arundo festucacea*, Willd.), for the first time in the United States so far as he knew, and who requested me to announce this addition to our flora in the BOTANICAL GAZETTE. He adds, however, that it abounds in the Saskatchewan region, and is well

known in N. Europe. In Dr. Vasey's recent paper on "The Grasses of the United States," the range given is from British America to Alaska. The present locality, therefore, extends its range several hundred miles southward. It probably occurs in Minnesota, as I found it but six miles south of the state line. It grows quite rank, in water from one to two feet deep, along with such plants as *Scirpus fluviatilis*, Gray, *S. validus*, Vahl, and *Typha latifolia*, L.—R. I. CRATTY, *Armstrong, Iowa.*

Sarcodes sanguinea.—Mrs. Austin's interesting note I only saw recently, on my return from the Pacific. While in the Yosemite Valley, on the 17th of June, Dr. Chas. Schaffer, of the Philadelphia Academy, Mr. J. M. Hutchings, the well-known and estimable guardian of the Yosemite, and I, took a pick-axe to Glacier Point especially to study the snow plant. We dug out carefully a fine specimen. It had started about a foot below the surface. We took the mass of earth to a neighboring pool, and washed out as gently as possible every particle of earth. In this way we found to a positive certainty that there was no attachment whatever to the roots of any other plant. The forest growth consisted of *Abies concolor*. There was nothing else growing near the snow plant. We may say positively it is not a parasite in the usual sense of the word. Is it a saprophyte—a plant of the *Monotropa* type, feeding on decaying vegetable matter? We could find no trace of vegetable matter more than is found in any ordinary earth, except here and there a few scattered pieces of charcoal about the size of peas, and not many of these. There was really nothing to indicate that the plant might not live and grow as ordinary plants, just as Mrs. Austin suggests, except the absence of ordinary roots. The roots, if they may be so called, consisted of a coralline mass, like unto, but larger than we find in *Corallorhiza*, *Monotropa*, and similar "saprophytes." Is it a perennial as Mrs. A. believes? I know *Corallorhiza* will come up for several years from pieces planted of these coralline masses. There is no reason why *Sarcodes* should not. However, I planted in a piece of woodland on my premises two very large masses kindly sent to me by a lady in Nevada, but there was no sign of their appearance last year. I have sown seeds now which I brought from the Pacific, in this piece of woods, to give them a chance to take any course they choose.

Those who have the opportunity will, I think, confer a great botanical service by studying closely this plant. We have come to believe that parasites with green leaves like the mistletoe, take crude sap from the foster plant and elaborate it for themselves, and that the paler plants take the sap already elaborated, and hence have no use for green leaves. If plants like *Sarcodes* feed neither on the living nor on the dead, they should have green leaves; or is it not necessary that they should obtain anything whatever from the atmosphere? I have thought that such plants as *Epiphegus* and some others are parasitic in the earlier stages, form this coralline mass, cut loose from the parent, and then live for some time on the mass so formed; but the evidence I have had does little more than suggest this. It seems to me there is a very interesting field open for those who have the opportunity for investigation.—THOMAS MEEHAN.

Zinnia grandiflora, Nutt.—In the latter part of July last, while botanizing in the vicinity of Pueblo, Colorado, I found this species of *Zinnia* in great abundance, and was especially struck with its singular and, to me, novel method for the dispersion of its seeds. The plants, though rarely more than four or five inches in height, were very showy, because of the abundance of their bright yellow flowers, large for the size of the plants. When I came to examine them somewhat closely I found that much of their conspicuousness was due to the fact that the ray-flowers, even of the oldest heads, though they had become dry and rigid, had lost but little of their original color. Further observation revealed the fact that the rays are persistent even until after the akenes are fully ripened. The heads then fall or are detached entire from their peduncles, and the thin, light, stiff rays, now answering for wings, they are carried away by the wind to great distances from the parent plant. By this method the seeds are dispersed for the growth of another year.

I record the fact as one of great interest. I have never seen the like artifice employed by any other plant for the dissemination of its seeds, nor seen such a one noticed by any writer.

I met the plant soon after in New Mexico, where it seemed equally abundant. It is well figured and described in Dr. Torrey's botanical contribution to Emory's "Notes of a Military Reconnoissance," p. 144.—DAVID F. DAY, *Buffalo, N. Y.*

Notes from the New York Agricultural Experiment Station.—In chapter xi, "Animals and Plants under Domestication," Darwin says that it is worth mentioning that he "fertilized the purple sweet pea (*Lathyrus odoratus*) with pollen from the light-colored Painted Lady. Seedlings raised from one and the same pod were not intermediate in character, but perfectly resembled both parents." I can offer some parallel illustrations:

Kernels of Waushakem flint corn, exposed last year to hybridization from Minnesota dent, planted this year, yielded ears of perfect Waushakem and perfect Minnesota type, without any intermediates. Kernels of Minnesota dent likewise exposed last year, yielded this year perfect ears of Minnesota dent and Waushakem corn without intermediates. Again, hybrid kernels from flint and sweet crosses have flint and sweet ears, without any intermediates, and flint and dent crossed kernels ears of flint and dent corn without any intermediates. Pop corn kernels likewise produced sweet corn, flint corn and pop corn ears, but no intermediates.

In crossing sweet and wrinkled peas, smooth and wrinkled peas were found in the same pod, but no intermediates. In crossing a smooth pea with pollen of the sugar pea, the pod was of the garden type, the seed of the sugar type.

Blue seed produced both blue and cream-colored peas, and cream-colored seed produced, occasionally, blue seed—excellent evidence in favor of the view that natural crossing occasionally takes place.

William the First, a smooth pea, planted late, but the pods harvested in a ripe condition, yielded wrinkled peas for crop.—E. LEWIS STURTEVANT, *Director.*